

1                                   **I CLAIM:**

2       1.    A clamp applicator comprising:

3           a housing having a motor with an ON/OFF and a

4                FORWARD/REVERSE switch;

5           a stationary first gripper located near a band entry

6                port in the housing;

7           a second gripper having a linkage to the motor to

8                move forward by means of a mobile gripper

9                housing toward the entry port and backward;

10          a cutter in the housing for cutting a tightened

11                clamp;

12          wherein a clamp tightening mode of operation powers

13                the second gripper backward while gripping a

14                segment of a clamp, thereby tightening the

15                clamp;

16          wherein a clamp cutting mode of operation powers the

17                second gripper forward, thereby releasing its

18                grip on the clamp segment and activating the

19                cutter to cut the clamp segment;

20          wherein the cutter further comprises a pivot mount

21                in the housing, and the second gripper has a

22                mechanical interface with one end of the cutter

23                to pivot a cutting end of the cutter into

24                contact with the segment of the clamp during the

25                cutting mode of operation; and

1            wherein the mobile gripper housing further  
2            comprises a release lever actuator which in the  
3            clamp cutting mode contacts a pivotable  
4            stationary gripper release lever, thereby  
5            releasing the stationary first gripper from the  
6            segment of the clamp after the cutting mode  
7            operation.

8

9            2.    The apparatus of claim 1, wherein the first gripper  
10          has a jaw that prevents the clamp segment from moving  
11          forward during the cutting mode of operation.

12

13          3.    The apparatus of claim 2, wherein the first gripper  
14          jaw travels in an angled slot so as to allow a proper slack  
15          in the clamp segment during the cutting mode of operation.

16

17          4.    The apparatus of claim 4, wherein the linkage  
18          further comprises a gear assembly and a torque adjustment  
19          assembly for the second gripper, thereby providing a  
20          variable tensioning capability to the clamp applicator for  
21          accommodating a plurality of clamp widths.

22

23          5.    The apparatus of claim 4, wherein the housing  
24          further comprises a screw drive for the second gripper.

25

1        6.    The apparatus of claim 1, wherein the motor is a DC  
2    type, the housing has a battery pack, and the housing has a  
3    DC input receptacle.

4

5        7.    The apparatus of claim 6, further comprising a  
6    detachable bench mounting base for the housing.

7

8        8.    The apparatus of claim 7 further comprising and  
9    AC/DC converter and a foot pedal controller for the motor,  
10   wherein both speed and direction are controlled by the foot.

11

12       9.    The apparatus of claim 1 further comprising a free  
13   end clamp adapter having a free end port on the housing and  
14   located forward of the entry port.

15

16       10.   The apparatus of claim 1, further comprising a  
17   manual release lever for each of the first and second  
18   gripper.

19

20       11.   A clamp applicator comprising:

21             a housing having a motor;

22             a powered pulling member having a clamp which  
23             removably attaches to a clamp segment;

24             a powered cutter to cut the clamp segment; and

1           an automatic clamp release mechanism which releases  
2           the clamp segment after the powered cutter cuts the  
3           clamp segment.

4

5           12. The apparatus of claim 11, wherein the pulling  
6 member further comprises a screw powered housing which  
7 contains an angled slot with a movable jaw therein.

8

9           13. The apparatus of claim 12 further comprising a  
10 stationary gripper located near a clamp entry port, said  
11 stationary gripper having a movable jaw to hold a segment of  
12 a tightened clamp.

13

14           14. The apparatus of claim 13, wherein the motor  
15 further comprises an ON/OFF and FORWARD/REVERSE switch,  
16 wherein the FORWARD mode powers the pulling member rearward,  
17 thereby pulling and tensioning the clamp, the reverse switch  
18 powers the pulling element forward, forcing a cutter into  
19 the clamp segment, and resetting the tool for the next  
20 clamp.

21

22           15. The apparatus of claim 14, wherein the cutter has a  
23 pivot and a lever arm, and the pulling member housing forces  
24 the lever arm to activate the cutter.

25

1        16. The apparatus of claim 11, wherein the motor is a  
2 DC type, and the housing receives a battery pack.

3

4        17. The apparatus of claim 11 further comprising a  
5 bench mount for the housing, an AC-DC converter, a foot  
6 switch controller and a DC input port on the housing.

7

8        18. The apparatus of claim 15, wherein the pulling  
9 member housing has a clamp exit port to allow the clamp  
10 segment to leave the housing in the REVERSE-RESET mode.

11

12        19. The apparatus of claim 14 further comprising a gear  
13 assembly and a variable torque clutch to enable a range of  
14 clamp widths to be applied.

15

16        20. The apparatus of claim 19 further comprising a free  
17 end clamp adapter to removably fasten adjacent to an entry  
18 port of the housing.

19

20        21. The apparatus of claim 13 further comprising an  
21 automatic stationary gripper release assembly.

22

23        22. The apparatus of claim 21 further comprising a  
24 manual release lever for each of the stationary gripper and  
25 the clamp.

1  
2       23. A clamp applicator comprising:  
3           a housing having a motor, a clamp entry port, a  
4           pulling member means functioning to pull a clamp  
5           segment away from the clamp entry port via a linkage  
6           to the motor;  
7           a cutter means functioning to cut the clamp segment  
8           via a linkage to the motor; and  
9           an automatic clamp release means functioning to free  
10          the clamp segment after a cut.

11  
12       24. The apparatus of claim 23, wherein the cutter means  
13       further comprises a pivotable arm having a cutting end and a  
14       lever end, and the linkage to the motor further comprises a  
15       gear assembly moving the pulling member means against the  
16       lever end.

17  
18       25. The apparatus of claim 24 further comprising a  
19       stationary gripper means function to hold the clamp segment  
20       during a cutting operation.

21  
22       26. The apparatus of claim 23, wherein the motor is a  
23       DC type, and the housing receives a battery pack.

24

1        27. The apparatus of claim 23 further comprising a free  
2 end clamp adapter removably attachable adjacent to an entry  
3 port of the housing.

4

5        28. The apparatus of claim 23 further comprising a  
6 variable torque transmission means for the motor to transmit  
7 an adjustable force to the pulling member means, thereby  
8 enabling an application of various width clamps.

9

10       29. The apparatus of claim 26 further comprising a  
11 bench mount, and AC/DC converter, a DC port on the housing  
12 and a foot activated controller for the motor.

13

14       30. The apparatus of claim 25 further comprising a  
15 manual release lever for each of the pulling member means  
16 and the stationary gripper means.

17

18       31. A clamp applicator comprising:

19           a housing having a motor with an ON/OFF and a

20                  FORWARD/REVERSE switch;

21           a stationary first gripper located near a band entry  
22                  port in the housing;

23           a second gripper having a linkage to the motor to  
24                  move forward by means of a mobile gripper  
25                  housing toward the entry port and backward;

1           a cutter in the housing for cutting a tightened  
2           clamp;  
3       wherein a clamp tightening mode of operation powers  
4           the second gripper backward while gripping a  
5           segment of a clamp, thereby tightening the  
6           clamp;  
7       wherein a clamp cutting mode of operation powers the  
8           second gripper forward, thereby releasing its  
9           grip on the clamp segment and activating the  
10          cutter to cut the clamp segment;  
11       wherein the cutter further comprises a pivot mount  
12          in the housing, and the second gripper has a  
13          mechanical interface with one end of the cutter  
14          to pivot a cutting end of the cutter into  
15          contact with the segment of the clamp during the  
16          cutting mode of operation; and  
17       a manual release lever for each of the first and  
18       second gripper.